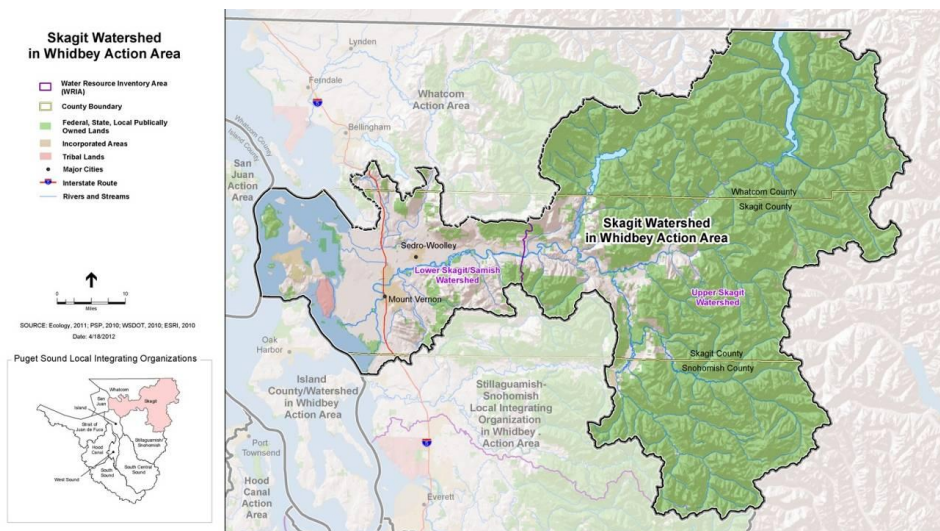


The Action Agenda in the Skagit Watershed

Profile

The largest watershed in Puget Sound, the Skagit system, begins in Canada and flows through the rugged Cascades down into low-lying valleys, draining into Skagit Bay. The rich soils of the river's broad delta support the region's most productive farmlands appreciated not only for their crops of berries, potatoes, and organic vegetables, but especially renowned for their bright fields of daffodils and tulips. The Upper Skagit River Valley is a favored wintering area for bald eagles. This impressive gathering of bald eagles, one of the four largest in the contiguous 48 states, coincides with the spawning runs of chum salmon on the Skagit River.

The Skagit Watershed is a fertile center of productivity for high-profile members of the ecosystem's food web including salmon, whales, herring, eagles, and people. Foremost among Puget Sound rivers in volume and length, the Skagit system has 2,989 identified streams totaling approximately 4,540 linear miles. Fed by glaciers on Mount Baker and Glacier Peak, the Skagit has a different seasonal flow pattern from the other major river systems in the area. The Samish River, a smaller drainage comprised of mostly lower elevation terrain, enters Samish Bay and is part of the greater Skagit Watershed (Water



Resource Inventory Areas (WRIAs) 3 and 4). The upper river is home to the region's only major complex of dams. Seattle City Light's dams are located above natural salmon barriers. Puget Sound Energy's two Baker dams obstruct anadromous fish from historic habitat and inundated Baker Lake, a natural lake critical to Baker River sockeye. Today, fish passage facilities built and operated by Puget Sound Energy allow migration of Sockeye and Coho salmon, and bull trout into the Shannon and Baker Reservoirs.

Also in the Skagit, the Cascade, Sauk, and Suiattle rivers are designated as Wild and Scenic, placing them among the largest undammed river systems remaining in the Pacific Northwest. The designation includes 158.5 miles within the Skagit Watershed. The Skagit Wild and Scenic River designation begins just east of the town of Sedro-Woolley, extending to Bacon Creek near the boundary of the Ross Lake National Recreation Area in the North Cascades National Park Service Complex.

The Skagit Delta contains large concentrations of wintering waterfowl, shorebirds, and raptors. A significant portion of an entire Trumpeter Swan population winters at the site, as well as the entire population of gray-bellied Brant, a subpopulation of Brant geese. Birdwatchers flock to the area in early spring to catch the inspiring sight of hundreds of snow geese rising off the fields in graceful waves. The estuarine and intertidal ecosystems are critical habitat for salmon, other marine fish, and wintering raptors and waterfowl.

Unique Ecosystem Characteristics and Assets

Once dependent on traditional Northwest economic sectors such as agriculture, fishing, and wood products, Skagit County has diversified – tourism, international trade, and specialized manufacturing now comprise the bulk the Skagit Valley economy. Skagit County also has ports and refineries, making it an important location for the petroleum industry. Although the economy has continued to diversify, fishing for salmon, crab, and shellfish remain an important commercial and recreational activity. Fishing is also a cultural focus and important source of food for the Swinomish, Sauk-Suiattle, Upper Skagit, and Samish tribes. The Swinomish, Sauk-Suiattle, and Upper Skagit tribes all have reservation lands located in the watershed. Major cities and towns in the Skagit Watershed include Mount Vernon, Anacortes, La Conner, Edison, Bow, Conway, Burlington, Sedro-Woolley, Lyman, Hamilton, Concrete, Rockport, Marblemount, and Newhalem.

Agriculture is still the major land use category in the river delta areas of the Skagit Watershed. Today the Skagit Delta is often referred to as, "The Agricultural Heartland of Western Washington" and encompasses approximately 70,000 acres. The agricultural industry generates approximately \$500 million annually in revenue and provides a unique landscape. The Skagit delta farming community also has developed a high level of cooperation to allow rotation for major cultivated crops.²⁵

Recreation and tourism are also important economic sectors, with opportunities for float trips, eagle watching, kayaking, camping, hunting, and backpacking. There are several designated wilderness areas. The North Cascades National Park and the Ross Lake National Recreation Area protect the headwaters of the Whidbey Basin,²⁶ while extensive areas of public and private forest, as well as several popular state parks, provide habitat protection and allow for low impact outdoor recreation. Forestland dominates the upper mountainous portions of the Skagit Watershed, with more than half in the Mount

²⁵ Additional information about the agricultural industry provided by the Skagit Conservation District can be accessed at:

http://www.mypugetsound.net/index.php?option=com_docman&task=cat_view&gid=184&Itemid=238

²⁶ The Partnership's enabling legislation designates, the Skagit, Island, and Stillaguamish and Snohomish basins as one Action Area called the Whidbey Basin Action Area. A map of the Whidbey Basin Action Area can be found at the end of this chapter.

Baker-Snoqualmie National Forest or in state-owned forests managed by Washington Department of Natural Resources.

Local Action Agenda Process

The work to develop an updated Action Agenda in the Skagit Watershed is in its nascent stages. At this time, the Skagit Watershed does not have a unified convening forum such as a local integrating organization (LIO). There have been initial discussions to develop this group; however, at this time, there is not a functional entity that can hold the update and content of the Action Agenda in a substantive way. The timeline for this effort is dependent upon the interest within the Skagit Watershed.

Due to the lack of a unified forum to organize information in a meaningful way that reflects local priorities and actions, the content presented below on pressures and strategies, sub-strategies, and near-term actions of this profile reflects a *starting point* from which to work. This profile is intended to capture comments and ideas received to date, but the information not been synthesized or advanced to develop actual strategies and actions. More work is needed to be further articulate how the Action Agenda will be implemented within the Skagit Watershed. Readers should consider this profile a tool to capture the dialogue to date regarding what should be incorporated into a local plan for the Skagit Watershed in order to recover the Puget Sound.

In the Skagit Watershed, there has been a tremendous amount of work to identify priorities through existing processes such as the Salmon Recovery Plan and municipal planning documents. A starting list of information is included in the 'References and Additional Resources' section. This resource section, combined with the initial conversations captured below, provides a starting point to develop a local Action Agenda for the Skagit water.

Key Threats/Pressures

At this time, all the pressures and associated sub-categories as defined in the regional taxonomy are deemed relevant to the Skagit Watershed. Further discussion about the relative level of threat and what pressures are most prevalent is still necessary. The following is the list of pressures for further discussion:

- Agriculture and Aquaculture (and all sub-categories)
- Energy production and mining (there is disagreement locally about whether this constitutes a pressure in the Skagit)
- Natural System Modifications (and all sub-categories)
- Biological Resource Use (and both sub-categories)
- Human Intrusions and Disturbance (military exercise sub-category has disagreement)
- Transportation and Service Corridors
- Residential and Commercial Development
- Pollution (and sub-categories)

- Invasive and other Problematic Species
- Climate Change²⁷

Changes in climate alter how the ecological systems across the watershed work and how, in turn, the pressures on those systems act. The following information from the Skagit Climate Science Consortium provides an overview of how the Skagit Watershed is experiencing changes and the types of categories to consider in the future conversations around the strategies and actions for implementing the Action Agenda in the Skagit.

The climate of the Pacific Northwest (PNW) has changed in measurable ways since the beginning of the 1900's. These changes have had important impacts in the Skagit watershed. For example, glaciers monitored by long-term studies have receded by about 50 percent and summer stream flows have dropped by up to 30 percent in streams with significant glacier coverage. Inter-annual snowpack has declined on the order of 50 percent in the Cascades since 1950, due to the combined effects of warming and loss of winter and spring precipitation. Water temperatures are rising and the average winter snowline has risen about 650 feet -- markedly increasing the effective size of the basin that captures winter rainfall and produces runoff during floods.

These changes alter such things as the timing of water availability, the magnitude and frequency of flooding, water supply availability and treatment needs, and many other factors affecting people and the PNW's ecosystems. Scientists project that many current trends will continue and intensify as a direct result of increasing greenhouse gas emissions in the 21st century. Research and current data suggest that the decisions necessary to protect human infrastructure and systems, and the natural environment, will require considering a future unlike the past; one where a dynamic and changing landscape becomes the norm.

Coping with a non-stationary environment will require new approaches to the management of human and natural systems, including extensive use of model simulations as a replacement for historical records, more and increasingly sophisticated monitoring, and planning over much longer time horizons (e.g. a century rather than 20 years). New approaches for building consensus in the face of uncertain and rapidly changing conditions will be needed to identify effective adaptation strategies and initiate new policies to cope with both short and long-term climate change impacts. As the landscape changes beneath and around our communities impacts to human and natural systems will increasingly become interwoven.

Climate scientists in the Skagit expect to see a continuation of existing trends in many areas:

- Decreases in summer rainfall
- Wetter springs and falls
- Increases in flood frequency and magnitude
- Lower summer flows and increased duration of low flows
- Changes in the timing of water availability
- Decreases in snowpack and continued and eventual disappearance of glaciers
- Changes in the abundance and distribution of plants, fish, and wildlife
- Increases in sediment loads and changing distribution

²⁷ Information on the type of pressures associated with Climate Change is continuing to be clarified through the work of Skagit Climate Science Consortium. Preliminary information is included in the pressure text around climate change per the work of the Consortium.

- Increases in sea level and storm surges
- Increased vegetation disturbance due to fire, insects, and disease

The following steps are designed to help the Skagit community determine where to focus additional research or data gathering exercises and move down a problem-solving path. Step 1) Answer the question. Step 2) Determine how significant the problem is in a relevant timeframe for the decision-maker and the interest at hand (e.g. ecological or human systems). Step 3) Determine what steps are necessary to identify and implement adaptation strategies to reduce risk.

Flooding

- Will flood risks increase in the Skagit basin in response to rising temperatures and increasing winter rainfall?
- Will the seasonality of floods change due to earlier storms or loss of snowpack?
- Are dams located where they can help mitigate increased flood flows?
- What will be the combined effects of increasing peak flows, sea level rise, groundwater flooding and channel infilling from increased sedimentation?

Water Supply

- Are water supply infrastructure, including wells and facilities in the floodplain threatened by sea level rise or increasing flood risk?
- Are treatment facilities able to handle predicted increases in turbidity levels?
- Will water supply be impacted by decreasing summer flows?
- Will changes in precipitation, including increased fall precipitation and lower summer rain-fall, affect supply?
- Will groundwater wells benefit from increased fall precipitation more or suffer from lower contributions from snow and decreased summer rainfall?

Drainage

- Will increased sea level rise or sediment deposition from the rivers impact drainage for farmland?
- Will sea level rise impact drainage either through complete loss of drainage capabilities or reduction in drainage duration?
- Will increases in fall and winter rainfall and changes in water table height impact drainage?

Habitat Restoration

- Will increases in sediment affect restoration efforts?
- Will increased sea levels affect restoration efforts?
- Will shifts in timing or magnitude of the peak flows affect restoration effort? Will low summer flows affect your restoration effort?
- Will ecosystem scale changes impact the species and processes you are seeking to restore?
- Will increases in air and water temperatures affect your restoration effort?
- Will dam management mitigate increases in peak and low flows or impact sediment regimes that may impact your habitat restoration?

Water Quality

- Will projected reductions in summer flows impact your National Pollutant Discharge Elimination System (NPDES) permitting or meeting total maximum daily load (TMDL) requirements?

- Will lowered summer flows and increases in water temperature result increasing low dissolved oxygen levels and algal blooms?
- Will turbidity levels increase?

The following opportunities, priorities and near-term actions can be considered within the context of changes to climate in the near and long term. Future conversations within the Skagit Watershed can provide the opportunity to further refine how to do this work.

Opportunities, Priorities, and Near-Term Actions

Further work is needed to finalize the specific strategies, sub-strategies, and near-term actions, as well as to prioritize work in the Skagit Watershed. The tables below were built through the feedback received by entities within the Skagit Watershed. The tables should be considered a “working document” that captures ideas to date. The 'notes' column in the first table reflects the comments received about the strategies so that readers can understand the existing dialogue around these strategies. At this time, there are no agreed-upon strategies nor near-term actions in the two tables below. Instead, these two tables will be used to advance the dialogue in the Skagit Watershed around key contributions within the Skagit Watershed for Puget Sound recovery.

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Protect and Restore Terrestrial and Freshwater Ecosystems			<p>Comment: Question 1, Page 3 states that the number of acres in farms is a measure of the health of Puget Sound. This ill-defined target and benchmark are not a meaningful measure of how well we are protecting Puget Sound. Should be linked to the number of acres of farmland where water quality is not compromised as a result of farming activity. Also applies to Priority A and to Sections A.2 and A.4</p> <p>Comment: Need to also consider and acknowledge that farmland plays a role buffering more intensive urban/commercial/industrial land uses. Working lands need to be acknowledged and brought into the Puget Sound discussion</p>
<i>Smart Growth, Development, Land Use and Land Protection.</i>			
Focus land development away		High	Comment: This is locally controlled;

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from ecologically important and sensitive areas			nothing about mitigation
Adopt clearing and grading ordinances throughout Whidbey Basin			
Review and apply recommendations of the Envision Skagit 2060 project		High	Comment: Need to specify which recommendations
Protect and restore native riparian forests along streams			Comment: Source: Salmon Recovery Plan
Protect, restore, and maintain fish passage at road culverts and tide gates			Comment: Source: Salmon Recovery Plan Comment: There are other cooperative efforts that work to advance this strategy, including TFI & DFI
Include Section 106 streamlining			
Protect and steward ecologically sensitive rural lands			
	Ensure that protection actions maintain funding priority.	High	Comment: In this economic downturn funding discussions & money seem to be leaning towards restoration however cost-benefit studies clearly show coordinated and systematic land protection pays off. Can't lose sight of this due to current economic climate- need to evaluate long term cost- benefit. Funding for stewardship or community systems for stewardship need to be included in protection costs and analysis. Protection is only meaningful if in perpetuity with a funded stewardship system (whether fee land protection or conservation easement). Comment: Should also include farmland protection.
Continue funding for CREP program and other voluntary agricultural stewardship programs			Comment: This is not specific to farming and it is not really clear how to identify ecologically sensitive or what stewardship means exactly. If they are

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			<p>degraded, will they be restored? How will they be integrated with ecological objectives? Distinctions should be made between those farming practices that support ecological objectives and those that do not.</p> <p>Comment 2: CREP is specific to agricultural lands.</p> <p>Comment 3: Consider embracing Malcom Gladwell's tipping point approach: it is the little things that over time achieve big outcomes (e.g. hedge rows, buffer strips, etc.). It doesn't have to all be 100 foot buffers.</p>
Support conservation markets and incentives programs for agricultural lands			
Update shoreline management plans and CAOs	To be done within the next 2 years	High	
Strategy around supporting agriculture in the context of having drainage, fish passage, marsh reclamation, and riparian issues done in a way that recovers salmon and a healthy Puget Sound			<p>Comment: Efforts to distinguish farms lands worthy of protected status from those that should not be included should recognize operators who have committed to sustainable practices that consider both land and water resources jointly. Clear benchmarks by which to measure farmland integration with ecological values should be developed and utilized.</p> <p>Comment: Comment number 1 assumes that farmland has no value other than what it can be converted to.</p>
Encourage compact regional growth patterns and create dense and attractive communities			
Work with Skagit County code to develop zoning rules that are compatible with restoration and protection			<p>Comment: Code allowing the subdivision of parcels in order to create substandard lots specifically for the protection of sensitive land would be helpful</p>

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			Comment: State requires protection of agricultural lands of long-term commercial significance in addition to other critical areas. Under the Growth Management Act, these prime farmlands are to be preserved for production of food and agricultural products for future generations. The Supreme Court also affirmed that land use activities which substantially interfere with maintaining and enhancing the farm industry, and have negative impacts on designated agricultural lands are prohibited.
Review and apply recommendations of the Envision Skagit 2060 project		High	
Adopt the Shared Strategy recommendations for protecting and preserving agricultural lands in the Puget Sound region			
Watershed Characterization process should be clarified: Who will do the characterization and what level of resolution will be developed?			
Protect and restore floodplain function		high	Comment: Nothing about flood hazard management plans in spreadsheet; the only recommended actions are to implement large scale floodplain restoration projects. Elements that include protection measures should be included. Comment: What about the role of farmland preservation? What about flood easements?
	Action around flood hazard mitigation plan		
Implement large-scale	Action around		Comment: Natural process-based

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floodplain projects to remove bank armoring, re-connect side channels and provide mainstem rivers with ability to migrate and create diverse instream habitat	FEMA NFIP rule		restoration should be prioritized. Costs of restoration need to be project life costs and include evolving design, monitoring and management including costs of possible impact to other landowners. Indemnification of landowners and insurance will help people to sign on to these projects.
Add protection strategy			Comment: Protection strategy should include a provision to prevent any new floodplain isolation or reduction in floodplain function. The impacts of climate change will likely exacerbate flooding issues creating a push for more flood protection infrastructure. Incentive programs could be established that identify alternatives to traditional flood protection strategies. These could include structure relocation or structure modification to increase flood resistance.
<i>Restore Key Terrestrial and Freshwater Habitats.</i>			
	Implement the projects identified in the Middle Skagit Project (Skagit Watershed Council)		
	Several projects identified in the Middle Skagit project are implementable in the next two years.	Medium	
Implementation and maintenance of key restoration projects for upland and freshwater ecosystems			
	Participate in knotweed removal efforts (Skagit Fisheries Enhancement	Medium	

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	Group)		
<i>Sustain Freshwater Availability for Instream and Human Uses.</i>			
Instream flow protection and enhancement			
Implement flow rules and programs in all basins		High	Comment: A6 includes implementing flow rules and programs, upgrade flow rules in Skagit basins, and protect intact mainstem rivers. There is nothing specific about the list of water critical basins and there is nothing about the Samish.
Upgrade flow rules in Skagit basins / Flow rules adopted and implemented for the Skagit Basin			Comment: It is unclear what upgrade flow rules in the Skagit basin is intended to do.
Protect intact mainstream rivers		High	Comment: Likely one of the best long- term solutions for the cost
Promote and fund programs that invest in public and private water use efficiency projects			
Groundwater protection and management			
<i>Protect and Recover Salmon.</i>			Comment: Broadening the salmon recovery effort to not only focus on Chinook would be more aligned with the goal of restoring ecosystems and fish restoration in general.
Protect and Recover Salmon			
Implement Salmon Recovery three-year work plan (WRIAs 3, 4); meet restoration targets set in the salmon recovery plans / The regional habitat protection decision making framework promoted here is inconsistent with the basis upon which watershed-specific Chinook Recovery Plans were developed. It is unclear what is being proposed- more details are needed regarding who will be making decisions and the			

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scope of their authority.			
Create and implement actions to monitor and adaptively manage salmon recovery work	Finish the AMM RITT template for the Skagit.	High	
Plan for the recovery of steelhead in the Skagit and Samish basins.	Review Skagit Plan for gaps in planned actions		Comment: May need more nearshore work identified.
Support Lead Entity program	Writing of the Puget Sound Steelhead recovery plan should at least be well underway within 2 years.		
Support/implement fish passage projects			
<i>Protect and Recover other Native Terrestrial and Freshwater Species.</i>			
Implementation of other plans in a coordinated way and maintenance and enhancement of biodiversity			
Implementation of Northern Pacific Coast Regional Shorebird Management Plan. United States Shorebird Conservation Plan, Pacific Coast Joint Venture North American Waterfowl Management Plan And North American Waterbird Conservation Plan, Oregon Spotted Frog program (WDFW)	Communicate with WDFW wildlife program to learn of other plans being implemented and developed		
Clarify process associated with Watershed Characterization, including what level of resolution used			Comment: Links to a Regional Strategy
Invasive species prevention and response			
Participate in knotweed removal efforts (Skagit Fisheries Enhancement Group)			Comment: There are groups other than the Enhancement Group working on knotweed removal
Participate in WDFWs Zebra Mussel prevention program			

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<i>Fill Key Science and Information Gaps for Terrestrial and Freshwater (see content in the Science Table below).</i>			
Include scientific references to support assertions made regarding threats to Puget Sound.			
Strategies and actions to flow from the Biennial Science Work Plan effort			
Protect and Restore Marine and Marine Nearshore Ecosystems			
<i>Nearshore Growth, Working Waterfronts, and Marine Protection.</i>			Comment: Nothing about fish passage in the spreadsheet.
Protection of marine and nearshore ecosystems that still function well			Comment: Need to strengthen connection with Puget Sound health. Comment: Mitigation practices and techniques need to be updated and consistently applied whenever permission is required from natural resources protection agencies (WDFW, Ecology, Corps, etc.)
Complete and implement Shoreline Master Program updates on schedule; implement restoration components of shoreline management plans			
Evaluate need to protect ecosystem processes and quality of life needs when considering tidal energy projects		High	Comment: Concern that we may get ahead of ourselves here before we know how these impact natural processes and habitat.
Protect Padilla, Skagit and Fidalgo Bays eelgrass beds			Comment: Need a funding source to contact private owners and purchase tidelands and then return these to public ownership (DNR etc) with a conservation easement or other protection mechanism on them.

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			Comment: Need to identify areas.
Protect unique spawning areas and bird habitat		High	Comment: Need for a co-ordination of all the various datasets, maps and plans into one useable and accessible source.
Re-visit WDFW rules allowing the construction of bulkheads to protect single family residents			Comment: Current code does not allow the denial of an application for building a bulkhead to protect a single family dwelling. Comment: WDFW does have the ability to require mitigation for bulkheads. If mitigation is applied properly new bulkheads would not create a net loss in habitat.
Support economic viability of working waterfronts to help maintain ecosystem function and sustain quality of life			Comment: Working waterfronts intermixed with a good level of connected community access will draw largest support
Note: B2 is about supporting economic viability of waterfronts. Also does not get at the health of Puget Sound ecosystem			
Promote public access and use of waterfronts and marine systems			Comment: Need more of this- public access is currently very limited and with population growth in the region it will be needed.
<i>Restore Marine and Marine Nearshore Areas.</i>			
Implement and maintain priority ecosystem restoration projects marine and marine nearshore ecosystems.			Comment: This is a challenging issue to address but needs to be figured out. Addressing this problem on a project by project basis is inefficient and often not successful. There needs to be a coordinated effort that applies a global view of the issues and that identifies threats and benefits to all parties involved.
Complete large scale estuary restoration projects in the Skagit,	Skagit Counties Freestad Lake project is ready to be started.		Comment: Need to repeatedly tell community about the cost-benefit of these projects. Currently seen by many citizens as costly or interfering with

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	WDFW/Ecology lands in Padilla bay need to be revisited for restoration opportunity.		<p>agriculture without clear understanding of the long-term benefits. Need to show how sea-level rise will factor into estuary restoration project planning.</p> <p>Comment: This Action Agenda statement fails to consider the existence of variable real world examples of large scale estuarine restoration projects that have already been implemented and are currently being monitored. The action item should take a more aggressive stance and work to ensure support for robust monitoring strategies, and subsequent implementation at all large scale estuarine restoration projects</p> <p>Comment: Need real accountability and need to publically process existing restoration sites</p>
Prioritize and strategically remove derelict gear			
Support and promote implementation of the Skagit Delta Tidegates and Fish Initiative Agreement			
<i>Protect and Recover Native Marine Species.</i>			
Protect and recover marine and nearshore species			
Invasive species prevention and response			
Continue local efforts to identify and eradicate invasive species impairing habitat		High	Comment: Needs to be systematic and science-based.
<i>Fill Key Science and Information Gaps for Marine and Nearshore (See content in Science Table below).</i>		High	Comment: Need to co-ordinate all the data and plans into one place. Data may be good but it is in multiple plans and data sets.
Strategies and actions to flow from the BSWP effort			
<i>Prevent and Reduce Toxic</i>			

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<i>Loadings into Puget Sound.</i>			
Implement toxic chemical and pollution policy and programs to reduce release of chemicals.		High	
Participate in WDFWs Ballast inspection program			
Implement and clean-up activities to reduce pollution			Comment: Air quality continues to be neglected in strategy document
Implement Watershed Management Plans addressing temperature, dissolved oxygen, mercury, and bacteria impairments			
Evaluate low dissolved oxygen levels in Saratoga Passage, and Possession Sound, and develop and implement strategy to address low dissolved oxygen levels if necessary (using lessons learned in Hood Canal)			
Protect clean air / protect air quality			
<i>Control and Manage Stormwater.</i>			
Use a comprehensive approach to manage urban stormwater runoff at the site and landscape scales			
Implement NPDES permits			
Use and increase site-appropriate LID techniques to manage for future planned growth			
Begin stormwater retrofits in dense urban areas		High	
Support the Skagit Clean Samish Initiative and continuing funding priority			
<i>Prevent Pathogen and Nutrient Loadings into Puget Sound.</i>			
Control and manage pollution from decentralized wastewater treatment			

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including large and small on-site systems			
Support local efforts to identify and control sources of pollution		High	
Control and manage pollution from centralized wastewater management			
Comprehensive approaches to rethink wastewater control and management			
Control and manage pollution from discharges of wastewater from boats and vessels			
Participate in WDFWs Ballast inspection program			
Agricultural and forest runoff			
Support TDR/PDR programs /Support Shared Strategy recommendations for providing more state and federal funding for PDR programs to keep farmland in farming.			<p>Comment: Need to do economic studies to ensure TDR & PDR programs get us where we need to go. If agriculture is not a long-term viable industry in the area where a program takes place, we may end up with lots of acres of invasives in the future and/or the conservation easements will be challenged and undone. To avoid this, conservation easements need to allow for open space and habitat uses if agriculture is no longer viable or as a secondary use. Groups that manage TDR and PDR programs should have transparent systems and funds to monitor and enforce these. TDR and PDR should bring cost of ag land down so affordable. Focus needs to be on maintaining viability of ag in the area as a priority since a robust ag industry is really what will keep the ag land in place in the long run.</p> <p>Comment: Concern about the comment above and whether this is asking the agricultural community to,</p>

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			"prove" through some sort of economic analysis and scientific evaluation that the industry will be around for the next 100 years.
Provide support for technical assistance and cost-share programs for small farms and commercial agriculture to improve and integrate agricultural nutrient management		High	
Integrate small farms into current programs		High	<p>Comment: Provide opportunities/programs that enable new farmers to establish viable businesses. Such programs exist at WSU extensions but they are small and could be expanded upon. There are many federal programs that aid folks interested in small scale farming. Opportunities and programs could also be provided to help current farmers change their business model to one that is economically beneficial to the farmer as well as beneficial to the ecosystem. These might include organic farming or biointensive farm practices.</p> <p>Comment: It should be recognized that this sector is most often not eligible for typical USDA programs. Needs additional financial support.</p>
Keep livestock out of streams			
Participate in the Skagit County Voluntary Stewardship Program	Local and State committees will be forming in the near future to create planning documents a programs.		
Shellfish bed restoration			Comment: Attention must be paid to toxic conditions found in some growing areas such that conditions are improved to the point that

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			consumption of fish and shellfish at rates common to tribal Communities will not jeopardize health. There is no provision for truly examining the connections between human health and the environment. An element should be added to the plan to address this.
Implement shellfish protection plans			Comment: Not clear what is in these plans or if the 10,000 acres is relevant. Comment: Consider testing the shellfish meat itself and not merely water quality
Participate in the Clean Samish Initiative		High	
Oil spill prevention, readiness and response			
<i>Fill Key Science and Information Gaps</i>			
Strategies and actions to flow from the BSWP effort			
Sustain, Coordinate, and Adapt Puget Sound Recovery Efforts			
<i>Capacity Building and Coordination / D1 includes working collaboratively with farming community, TFI, and alt futures project. The TFI, DFI and Alt Futures processes lack substance and resource related goals and objectives. This strategy should speak to specific programs and partnerships that seek cohesion with ecological outcomes.</i>			Comment: D1 includes working collaboratively with farming community, TFI, and alt futures project. These processes have shown little resource benefit and are largely focused on addressing mitigation requirements for agriculture activities that continue to damage resource values (DFI & TFI). References to these should be removed or revised to strengthen Ag community obligation to go beyond mitigation and start helping to restore and recover the Puget Sound. Regulations should be put in place to insure the water quality standards are met on streams flowing through agricultural lands.; Other than nutrient runoff and supporting collaborative efforts there are no

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			specific agenda items, and nothing related specifically to drainage, fish passage, marsh reclamation, or riparian issues. Nothing about lead entities in spreadsheet. Comment: Concern with the above comment in terms of tone and information. There are many projects on agricultural land that have been completed to help in the restoration and recovery of Puget Sound.
Building and sustaining cooperative partnerships			This strategy should speak to specific programs and projects that seek cohesion with ecological outcomes
Support integration of species recovery, water quality, aquatic reserve and natural resource management plans, shoreline master programs, and Marine Resource Committee strategies; start with salmon recovery, MRC, and water management plans			
Continue to work cooperatively with farming community to develop a coordinated restoration strategy that balances the needs of agriculture and fish		High	
Support engagement of salmon recovery watershed groups with the Skagit County Agricultural Advisory Boards and other farming groups			Comment: Add a salmon and shellfish advisory board to the County infrastructure. Comment: Believe that this has already been done.
Support collaborative efforts to negotiate the Skagit Delta Tidegates and Fish Initiative / negotiation complete	Support implementation of the Skagit Delta Tidegates and Fish Initiative Final Agreement		
Sustain recent collaborative efforts to identify protection			

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and restoration opportunities in the Skagit watershed			
Implement Skagit Alternatives Futures Project results; expand project as warranted; integrate and coordinate project with other Skagit community efforts / Implement Envision Skagit 2060 results; expand project as warranted; integrate and coordinate project with other Skagit community efforts			Skagit Alternate Futures is now called Envision Skagit
Tribes are treated as the formal governments they are. Government to government discussions, especially as co- manager roles with regard to fisheries.			No, language is not assertive nor well placed. PSP has shown some disregard for this relationship
Implement a process that is bottom up, based on a locally- driven effort.			
Sustain recent collaborative efforts by Ducks Unlimited and regional agricultural interests to initiate the "Preserving Farmland, Waterfowl and Coastal Estuaries in North Puget Sound" program.			
Continue to endorse implementation of the Skagit Delta Drainage and Fish Initiative - Maintenance Plans			
Funding strategies			
			Need to flesh out the details of this strategy
Social and institutional infrastructure			
Use climate change science to inform strategies and actions			The Skagit Climate Science Consortium identified a series of questions intended to guide discussions within the Skagit Watershed on how address management decisions, keeping in mind the related climate change impacts. This list of questions can is

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			above in the pressure section
Add in strategy around Section 106 streamlining re: restoration projects			
Increase public awareness and understanding			
Implement STORM group recommendations			
Cultivate broad-scale practices and behaviors			
Fill key science and information gaps (<i>See Science Table below</i>)			
Develop strategies that allow multiple goals to be addressed concurrently.			Comment: The Action Agenda has set out a very ambitious recovery agenda with a wide variety of goals and indicators. In order to make significant advancement that can be measured, initiatives or strategies that cut across goals or indicators should be prioritized. These will provide efficiencies and help to garner funds from more sources as budgets are tightened. Examples of cross-cutting strategies may be floodplain restoration that is critical for salmon recovery and flood protection. Farmland improvements that help to preserve farmland, restore riparian habitat for salmon and decrease runoff from agricultural production.
Analyze strategies and specific actions to ensure that they are not contradictory to other goals.			Comment: The goals and targets of the Action Agenda are so diverse, some may be in conflict if not carefully implemented and designed. Approaches that integrate goals will help to reduce the probability of conflict.

*Skagit developed this list of local strategies within the context of an early draft outline of regional strategies and sub-strategies. Since this list of local strategies was compiled, the regional strategy outline changed. As such, the order and wording may not match what is currently in the Action Agenda. Once the local area has completed their prioritization process, the final list of local strategies will be cross-walked with the most current regional strategies.

Scientific Questions:

STRATEGY CATEGORY	DRAFT KEY UNCERTAINTIES	DRAFT SCIENCE NEED
Protect and Restore Terrestrial and Freshwater Ecosystems	Amount of hardscaping and threshold point for significant impairment of watershed health and function; Juvenile fish use of freshwater habitat	Need to combine all the data and plans and existing science into one useable source; Which fish use which freshwater habitats and at what densities. This will help determine restoration priorities and trajectories
Protect and Restore Marine and Marine Nearshore Ecosystems		Need to combine all the data and plans and existing science into one useable source
Reduce and Control the Sources of Pollution to Puget Sound	Effect of agricultural runoff	Need to know if agricultural runoff is affecting aquatic ecosystems and organisms. With this information we can determine what agricultural management practices are needed to protect aquatic resources. Include in investigation the information already being tracked.
Sustain, Coordinate, and Adapt Puget Sound Recovery Efforts	Steelhead populations, life history and habitat use	Need to combine all data and plans and existing science into one useable source; Need to know about steelhead in order to plan for their recovery.
	Incorporate scientific references to support information associated with threats to Puget Sound	Evaluate the contribution made by restoration thus far and how much more will be needed. Methods and metrics need to be updated or provided to allow the evaluation and monitoring needs to be conducted to test the methods.
	Need further information about the use of 'acres in farms' as a measure of the health of Puget Sound. This comes from Question 1, Page 3 in 2008 AA	
	Uncertainty, or lack of description, about the connection between toxicity, fish consumption, and human health	
	Need regional habitat protection strategy that is consistent with the Salmon Recovery Plan	
	Need for monitoring of estuarine projects	
	Question around mitigation banking at the regional scale	
	Need clear benchmarks re: farmland integration with ecological values	
Changes in Climate and Associated Implications	The Skagit River delta is a significant natural and human resource. Under projected sea level rise scenarios the fate of the Skagit Delta becomes increasingly uncertain, and understanding the fundamental balance	Studies are needed to: a. Estimate the effects of climate change on bedload regime and the fate and transport of suspended sediments in the Skagit mainstem, estuary, delta,

STRATEGY CATEGORY	DRAFT KEY UNCERTAINTIES	DRAFT SCIENCE NEED
	between rising sea levels and increasing sediment loading becomes a crucial need.	and Puget Sound b. Effects of climate change on turbidity c. Identification of key sediment storage areas
	Low flows are of utmost importance to humans and ecosystems. Rapidly changing glaciers, snowpack and groundwater resources will all influence low flows. More information on glaciers is needed to inform dam management, salmon and bull trout restoration efforts and water supply decisions.	Studies are needed to: a. Update and extend the Skagit glacier inventory b. Model glacier run-off processes and model future impacts c. Estimate groundwater impacts in the Skagit lowlands
	Skagit floodplain management is imperative to human and ecosystem communities. Flood magnitude and frequency is projected to increase dramatically in the Skagit River. Flood managers need access to better tools to help them understand future scenarios and plan for flood mitigation approaches that also improves ecosystem resiliency.	Studies are needed to: Provide inundation maps and associated vulnerability assessments for the combined effects of sea level rise and increasing flood risks projected for the 21 st century.
	As peak and low flows are changing, water temperatures are increasing and monitoring of water quality and ecosystem impacts becomes increasingly important. Scientists are predicting changes in dissolved oxygen, temperature, and salinity that have important impacts on TMDLs, ecosystem health and water quality. Biogeophysical models can be used to predict these changes, but sufficient data is rarely available to evaluate these tools.	Studies are needed to: Monitor estuarial circulation impacts to water temperature, salinity, and nutrients due to changes in air temperature and river flow.
	Habitat restoration has been put forward as a primary strategy to build resiliency in the ecosystem. In this context it is critical to understand the impacts of a changing climate on species of interest. These include primary production, forage fish (herring), anadromous fish (salmon), terrestrial and marine mammals, birds, etc.	Studies are needed to: Spatially predict which estuarine and nearshore vegetative species can thrive where under different climate scenarios. This is completed through niche modeling as a means to estimate changes in nearshore habitat.
		Evaluate the delta for the affect of sea level rise on the viability of agriculture.

Relationship to Recovery Targets

The entities within the Skagit Watershed that provided feedback feel that it is critically important to accomplish the regional recovery targets. At this time however, there is no specific information on where or how recovery targets are being addressed in the Skagit Watershed.

References and Additional Resources

The following list of references and additional resources is a starting point for additional work to organize and identify the strategies and actions most relevant in the Skagit Watershed. This is not intended to be a comprehensive list. Additionally, many key resources are not available online.

Puget Sound Salmon Recovery Plan, Skagit Chapter. Available online at:

http://www.psp.wa.gov/SR_map.php

Skagit County Planning Documents, including but not limited to the Critical Area Ordinance, Shoreline Master Program, Sub-Area Plans, and Flood Management. Available online at:

<http://www.skagitcounty.net/Common/asp/default.asp?d=PlanningAndPermit&c=General&p=main.htm>

Snohomish County. Surface Water and Planning. Available online at:

http://www1.co.snohomish.wa.us/Departments/Public_Works/Divisions/SWM/ and
<http://www1.co.snohomish.wa.us/Departments/PDS/default.htm>

Whatcom County. Surface Water and Planning. Available online at:

<http://www.co.whatcom.wa.us/publicworks/index.jsp> and
<http://www.co.whatcom.wa.us/pds/index.jsp>

Skagit Watershed Council Information and Links. Available online at: <http://www.skagitwatershed.org/>
and <http://www.skagitwatershed.org/Links.aspx>

Seattle City Light. Information Available online at: <http://www.seattle.gov/light/>

Swinomish Indian Tribal Community. Information Available online at: <http://www.swinomish.org/>

Sauk-Suiattle Indian Tribe. Information Available online at: <http://www.sauk-suiattle.com/>

Upper Skagit Indian Tribe.

Samish Indian Nation. Information Available online at: <http://www.samishtribe.nsn.us/>

Town of Darrington. Information available online at: <http://town.darrington.wa.us/>

City of Mount Vernon Planning Documents, including but not limited to Critical Area Ordinance, Master Plan, and Land Use Development Projects. Available online at: http://www.ci.mount-vernon.wa.us/community_and_economic_development

City of Burlington Planning Documents, including but not limited to Flood Management and Shoreline Master Plan Update. Available online at:
http://www.ci.burlington.wa.us/page.asp_Q_navigationid_E_317

Town of La Conner Planning Documents, including but not limited to Comprehensive Plan and Shoreline Master Plan. Available online at: <http://www.townoflaconner.org/planning-permits-codes.cfm>

City of Anacortes Documents, including but not limited to Comprehensive Plan and Shoreline Master Plan. Available online at: <http://www.cityofanacortes.org/planning.htm>

Forest Service, Mt. Baker-Snoqualmie Forest. Information Available online at: <http://www.fs.usda.gov/mbfs>

National Park Service, North Cascade Parks Complex. Information Available online at: <http://www.nps.gov/noca/index.htm>

Department of Ecology Water Quality TMDLs. Available online at: <http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/tmdl-wria03.html>

Department of Ecology Watershed Management. Available online at: <http://www.ecy.wa.gov/programs/eap/wrias/Planning/03-04.html>

Skagit Climate Consortium. Information Available online at: <http://www.skagitclimatescience.org/>

Skagit Environmental Endowment Commissioner. Information Available online at: <http://skagiteec.org>

Skagit River History Project. Information Available online at: <http://www.skagitriverhistory.com>

Profile Text References

http://www.nwr.noaa.gov/Salmon-Recovery-Planning/Recovery-Domains/Puget-Sound/upload/Ch5_Skagit.pdf

<http://hwsconnect.ekosystem.us/Project/280/10306>

<http://www.rivers.gov/wsr-skagit.html>

<http://skagitcounty.net/common/asp/default.asp?d=Home&c=General&p=about.htm>

<http://washington.hometownlocator.com/wa/skagit/>

<http://www.skagitonians.org/spf-at-work.cfm>

http://www.gorp.com/parks-guide/travel-ta-ross-lake-national-recreation-area-washington-sidwcmdev_068279.html